

# Water Quality Report



2010  
Real East Texas  
CITY OF LONGVIEW

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CITY OF LONGVIEW

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Water Quality Report **2010**

## Did You Know?

- Americans drink more than 1 billion glasses of tap water each day. You can refill an 8 ounce glass of water approximately 15,000 times for the same cost as a six-pack of soda. Bottled water can be up to 1,000 times more expensive than tap water.
- Water is essential to the human body's survival. A person can live for about a month without food, but only about a week without water.
- Water helps to maintain healthy body weight by increasing metabolism and regulating appetite. It also leads to increased energy levels. The most common cause of daytime fatigue is actually mild dehydration. By the time a person feels thirsty their body has lost over 1 percent of its total water amount. Water can even prevent and alleviate headaches and joint and back pain.
- Water regulates the temperature of the human body, just as it regulates the earth's temperature. If you have a fever, you should drink lots of water.
- There is the same amount of water on earth as there was when the earth was formed. The water that came from your faucet could contain molecules that Neanderthals drank!
- In a 100-year period, a water molecule spends 98 years in the ocean, 20 months as ice, about 2 weeks in lakes and rivers, and less than a week in the atmosphere.
- One inch of rainfall drops 7,000 gallons, or nearly 30 tons, of water on a 60'x180' piece of land. A single tree will give off 70 gallons of water per day in evaporation.
- Of all the earth's water, 97% is salt water found in oceans and seas. Only 1% of the earth's water is available for drinking water. Two percent is currently frozen. Over 90% of the world's supply of fresh water is located in Antarctica.
- If all of the world's water were to fit into a gallon container, the fresh water available to use would equal only about one tablespoon.
- Water is the only substance that is found naturally on earth in three forms: liquid, gas, and solid. It is therefore found not only on the surface, but also in the ground and in the air.
- Water moves around the earth in a water cycle. The water cycle has five parts: evaporation, condensation, precipitation, infiltration, and surface run-off.
- The 3rd highest use of indoor water is bathing, and because most of us like to use warm water when we bathe, it is also the 2nd highest use of energy in the home. Energy efficient appliances are usually water efficient too. A small drip from a faucet can waste as much as 20 gallons of water a day.
- Toilets can account for almost 30% of all indoor water use, more than any other fixture or appliance. An average of 20% of toilets leak.
- Clothes washers can use as much as 30 to 35 gallons of water per cycle and dishwashers as much as 25 gallons per cycle. A full dishwasher is more efficient than washing the same load by hand.

Real East Texas  
CITY OF LONGVIEW

## OUR PRIDE & DEDICATION

Safe drinking water is an essential and precious resource for our community. We utilize the latest technology to treat your drinking water and this water is tested continuously to ensure high quality.

As a Division of the City of Longview's Public Works Department, Water Supply and Purification provides safe and potable water. Our primary goal and responsibility is to provide you with safe and reliable drinking water. The City of Longview is committed to maintaining an adequate raw water supply and producing potable water at sufficient pressure, volume and quality for our customers. We strive to continuously improve service to the community and wholesale customers by monitoring the watershed and our water treatment plants and distribution system to ensure that they meet local, state and federal regulations. We also strive to meet the demands of our community and maintain fire protection by operating and maintaining our facilities, booster stations, valves, and elevated storage towers throughout the City.

The City of Longview Public Water Supply employees are proud of the role they play in protecting public health and providing safe and potable water to the City of Longview. Over the years, we have dedicated ourselves to producing drinking water that goes above and beyond state and federal drinking water standards. We continually strive to adopt new and better methods of delivering the best quality drinking water to you. The licensed water professionals of the City of Longview are committed to providing quality, innovative services that set the standard for professionalism and excellence. As new challenges to drinking water safety emerge, we will be vigilant in maintaining our objective of providing quality drinking water at an affordable price.

It is important to us that you have information about your drinking water so you can have confidence in the product we deliver. This report provides you with information about the quality and sources of the drinking water you received in 2010. As you read this report, you will learn that the water delivered to your tap meets or exceeds all state and federal water quality standards. We hope that you will find it useful and reassuring that your water is safe to drink.

If you have any health concerns related to the information in this report, we encourage you to contact your health care provider. For more information about this report, or for any questions relating to your drinking water, please call the Water Purification Division at 903-237-2780.



## How to Contact Us

Billing Questions: **903-237-1030**

Questions About the Quality of Your Drinking Water: **903-237-2780**

Water & Sewer Emergency, Service Interruptions: **903-236-3030**

Water Conservation or to Request a Speaker: **903-237-1034**

Source Water Assessment Questions: **903-291-5234**

Storm Water Runoff & Pollution Management: **903-237-1018**

To Report Water Pollution: **903-291-5234**

You can also find us on the internet at [www.LongviewTexas.gov](http://www.LongviewTexas.gov)

The City Council meets every 2nd and 4th Thursday of each month.  
Call **903-237-1080** or check our website for more information.

The Longview City Hall is located at 300 West Cotton Street.  
Offices are open from 8 a.m. to 5 p.m.

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono 903-237-1060, 903-237-1236, 903-232-0063, or 903-237-1199.

## Special Notice

**Required language for ALL community public water supplies.**

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at (800) 426-4791.

## Substances Expected IN DRINKING WATER



The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

• **MICROBIAL CONTAMINANTS:** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

• **INORGANIC CONTAMINANTS:** such as salts and metals, which can be naturally-occurring or result from urban storm runoff, industrial, or domestic wastewater discharges, oil and gas production, mining or farming.

• **PESTICIDES AND HERBICIDES:** which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.

• **ORGANIC CHEMICAL CONTAMINANTS:** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

• **RADIOACTIVE CONTAMINANTS:** which can be naturally-occurring or be the result of oil and gas production and mining.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.



# Longview Continues To Improve Your Water Quality & Service

As drinking water standards continue to tighten, our challenge is to meet these stricter regulations. This means we must continue to update the treatment technology used at our water plants, pump stations, and storage tanks. As the City of Longview continues to grow and look toward the future, we continue to improve ourselves and the quality of the water that is sent to you and how it travels to your home or business. The City of Longview's Public Water System is widely recognized as a leader in the municipal utility industry and has made a measurable improvement to customer service. Our licensed professionals are committed to providing a safe product for your use.

Changes, renovations, and rehabilitations occurred at the Sabine River Water Treatment Plant throughout 2010. Construction of a 35 million gallon reservoir is complete and the reservoir is in use. This allows the plant to operate without interruptions while addressing issues at the Sabine River Raw Water Pump Station and allows for additional settling time to help remove total organic carbon, taste and odor issues, and any other issues that may arise due to river contaminants, such as oil and salt water spills, and fluctuations. Also, a complete rehabilitation of the plant filters, renovation of a clarifier, a new carbon contact chamber and a carbon silo relocation is complete at Sabine River WTP. These ensure more consistent taste and odor treatment and TOC removal and improve the treatment processes of the water treatment plant.

Due to extensive erosion from high water levels, a retaining wall bank at the Lake O' the Pines Raw Water Pump Station was restructured and reconstructed. This project will ensure less erosion in the future and will further strengthen the future raw water pumpage capability.

A recirculation pump has been purchased and installed at the High Street Elevated Storage Tower. This pump will help the City of Longview work towards the implementation of the 2nd stage of the Disinfectant & Disinfection Byproducts Rule from the EPA. A continuous recirculation has been proven to maintain steady disinfectant residuals and to lower disinfection byproducts.

A sludge removal program continues at the Lake O' the Pines Water Treatment Plant and will begin at the other two plants in the near future. This program was implemented due to known high costs for contracted sludge removal and will provide cost savings for this requirement.

Numerous security enhancements and upgrades continue to occur throughout the City of Longview Public Water System. All enhancements and upgrades are based upon the information provided by the Vulnerability Assessment (VA) as required by the Texas Commission on Environmental Quality (TCEQ) and will help to increase the security and safety of your drinking water.

During the last few years, the Environmental Protection Agency (EPA) has implemented new rules regarding surface water treatment; the Stage 2 Disinfectants & Disinfection Byproducts (Stage 2 DBP) Rule, the Long Term 2 Enhanced Surface Water Treatment (LT2) Rule and the 2nd phase of the Unregulated Contaminant Monitoring Rule (UCMR2). For each of these new rules, the City of Longview will evaluate and is performing additional sampling on our source waters, water treatment plants, and distribution system to gather more information. The information from all of these new rules will be compiled by the EPA and used to provide additional modifications or improvements in the treatment techniques used by the City of Longview and used in future regulatory decision making by the EPA. For more information on these and other rules and regulations, visit: [www.epa.gov/safewater](http://www.epa.gov/safewater).

The City of Longview did not experience any water shortages or implement any conservation plans during 2010.



## City of Longview Sources Of Drinking Water & Distribution System

Longview uses surface water from three sources: Lake Cherokee, Sabine River, and Lake O' the Pines. A source water assessment has been completed by the Texas Commission on Environmental Quality (TCEQ) for all three water sources and the report is available to review by calling us at 903-291-5234 or 903-237-2780. It allows us to focus on our source water protection activities. The results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detection of these contaminants will be found in this report. For more information on source water assessments and protection efforts at our system contact us at 903-291-5234. To monitor water quality in local rivers, streams, and reservoirs, the City of Longview has a Watershed Management Program. We work closely with the Sabine River Authority, Cherokee Water Company, Northeast Texas Municipal Water District, Texas Railroad Commission, Texas Commission on Environmental Quality (TCEQ), Texas Parks and Wildlife Commission, American Water Works Association, Texas Water Utilities Association and local industries to monitor and maintain a high level of water quality.

Under normal operating conditions, the Cherokee, Sabine River, and Lake O' the Pines Water Treatment Plants treat and distribute water to elevated and ground storage tanks with the capacity of approximately 6 million gallons of water throughout the City in over 600 miles of pipeline. The east and southeast regions of Longview typically receive water from the Cherokee Water Treatment Plant. The west and southwest regions of Longview receive water from the Sabine River Water Treatment Plant. The north region receives water from the Lake O' the Pines Water Treatment Plant. Due to changes in demand and normal or emergency maintenance requirements, the typical distribution of water may change and residents may receive water from any of the water treatment plants.

## Storm Water Pollution Prevention Program

Watersheds may be susceptible to contamination resulting from flood, erosion, and pollution, also referred to as storm water runoff. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated. The primary method to control storm water discharges is the use of best management practices (BMPs).

The following are some common BMPs that may help prevent storm water pollution

- Use fertilizers sparingly
- Sweep up driveways, sidewalks, and gutters
- Never dump, blow, sweep, or wash anything down storm drains
- Don't leave bare spots in your yard
- Compost wastes
- Use less toxic pesticides, follow labels, and learn how to prevent pest problems
- Direct downspouts away from paved surfaces; consider a rain garden to capture runoff
- Take your car to the car wash instead of washing it in the driveway
- Check your car for leaks and recycle your motor oil
- Pick up after your pet
- Remember that storm drains discharge into the local water bodies and that you need to protect these water bodies



The City of Longview has incorporated a program to help manage storm water pollution. Storm water pollution is being reduced from the monitoring and modification of the City's operations through good municipal housekeeping and best management practices. Our program also works to control construction runoff resulting in less sediment, the number one pollutant in our watersheds through the use of silt fencing or hay bales. Finally, one of the most important parts of this program is the education and involvement of the public and citizens of Longview regarding watersheds and storm water pollution. You can make a difference!

For more information or to report an incident regarding discharges into the storm water drains or into the watershed, please feel free to contact the Streets and Drainage Division of the City of Longview's Public Works Department at 903-237-1018.

# Frequently Asked Questions about Your Water

- If my water tastes or smells different, is it still safe to drink?

All water has its own unique taste and odor characteristics. Contaminants may be found in drinking water that can cause taste, color or odor problems. These types of problems are not necessarily causes for health concerns. The City of Longview, like many other water suppliers, occasionally experiences changes in taste and odor. Algae and bacteria naturally found in surface waters can produce different types of tastes and odors. Geosmin and 2-Methylisoborneol (MIB) have been identified as odor-causing compounds and are detectable at levels as low as five parts per trillion (ppt or nanograms per liter). When conditions are favorable (changes in temperature, excessive rainfall, flooding, drought, or dry weather conditions), the bacteria and certain blue-green algae produce a musty or earthy taste and odor. Although these contaminants impart an unpleasant taste and odor, they do not have an established Maximum Contaminant Level (MCL) nor pose any known health risks. Water that has been stored in a pipe for a long time, especially during warm weather, also may develop an odor. That explains why you may notice a change in your water after returning from vacation.

- What is the hardness of the water?

Water supplied to you is considered soft to moderately hard in the Lake O' the Pines service area and moderately hard in the Lake Cherokee and Sabine River service areas. What makes water hard is a combination of minerals that are present in nearly all natural waters. The average hardness for water in 2010 from Lake Cherokee is 72 mg/L (4.2 grains/gallon), Lake O' the Pines is 69 mg/L (4.0 grains/gallon), and Sabine is 92 mg/L (5.4 grains/gallon).

- Why does my water appear cloudy or milky at times?

Cloudy water is often caused by dissolved oxygen being released from the water. Cold water can hold more oxygen than warm water. Water saturated with oxygen will release oxygen as it warms or as the pressure is released. This release makes the water appear milky or cloudy, but it does not affect the safety of the water. The cloudiness usually will disappear in about 30 seconds.

- Why does my water sometimes look brown or red?

Often your water is discolored because of pipeline breaks and repairs. The color comes from iron or mineral deposits inside the pipe that become dislodged during the repairs. If the color is due to line breaks, run the faucet until the water is clear. If the water does not clear within several minutes, call the water and sewer emergency line at 903-236-3030 for assistance.

- What is the white build-up on my faucet strainers?

The white build-up is calcium carbonate. Lime is added to the water to adjust the pH to provide a stable water to prevent premature corrosion of the distribution system. This calcium carbonate product places a protective film that coats the inside of the water pipes much like the paint on your car or house protects the metal or wood. When there is a change in flow or the water usage increases in the pipeline, calcium carbonate build-up may break off and enter the water stream. Calcium carbonate may accumulate in the water heater or sink faucet strainers. To alleviate this problem, you can flush the lower drain system on your water heater or rinse off the deposits on the sink faucet strainer.

## What's In the Water ?

We are pleased to report that during the past year, the water delivered to your home or business met or exceeded all drinking water requirements. We analyze water samples for bacteria, turbidity, inorganic contaminants, lead and copper, nitrate, volatile organic contaminants, total trihalomethanes, haloacetic acids, and synthetic organic contaminants. For your information, we have listed in the following tables the substances that were detected in our drinking water during the year. Although all of the substances listed are under the Maximum Contaminant Level (MCL) set by U.S. EPA, we believe it is important that you know exactly what was detected and how much of the substance was present in the water.

## Water Security: The Water You Save May Be Your Own!

Water Security is a shared responsibility involving water suppliers, wastewater utilities, government, law enforcement and citizens, such as you. We can all be involved in homeland security by playing an important role in protecting our critical water resources. Local drinking water and wastewater systems may be targets for terrorist and other possible criminals wishing to disrupt and cause harm to your community. Water utilities are often located in isolated areas. Drinking water sources and wastewater collection systems may cover large areas that are difficult to secure and patrol without your help.

Residents can be informed on how to observe and notice, what to report and who to report to, with regards to any suspicious activity in and around local water utilities. Interested and dedicated citizens are essential to increasing the security eyes and ears in your community.

### What You Observe is Important:

If you see a non-City vehicle at any of the water towers, raw water pump stations, or water treatment plants at odd hours, please be sure to contact us at 903-237-2780 or 903-236-3030. When you contact us, be sure to do the following:

- Observe and state the nature of the incident.
- Identify yourself and your location.
- Identify location of activity.
- Describe any vehicle involved (color, make, model, license plate #).
- Describe the participants (how many, sex, race, color of hair, height, weight, clothing)
- What kind of activity was the participant(s) involved in? Were they taking pictures? Were they sitting in their car or walking around the parameter?
- Remember that the more information you provide the better.

Form and operate a citizen's watch network within your community to communicate regularly with law enforcement, your public water supplier and wastewater operator. Communication is the key to a safer community! Be alert! Become aware of your surroundings.

For more information on water security visit: [www.epa.gov/safewater/security](http://www.epa.gov/safewater/security)



## Table Definitions

**MAXIMUM CONTAMINANT LEVEL GOAL (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MAXIMUM CONTAMINANT LEVEL (MCL)** – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)** – The highest level of a disinfectant allowed in drinking water. This is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**TREATMENT TECHNIQUE (TT)** – A required process intended to reduce the level of a contaminant in drinking water.

**ACTION LEVEL (AL)** – The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

**mrrem/YEAR** – Millirems per year (a measure of radiation absorbed by the body)

**pCi/L** – Picocuries per liter (a measure of radioactivity)

**NTU** – Nephelometric turbidity units (a measure of turbidity)

**ppm** – Parts per million / milligrams per liter (mg/l)

**ppb** – Parts per billion / micrograms per liter (ug/l)

**NA** – Not applicable

**ND** – Not detectable at testing limits

# Regulated Substances AT THE TREATMENT PLANTS

YEAR	CONSTITUENT	AVERAGE	DETECTED RANGE	MCL	MCLG
2010	Chloramines (ppm)	1.57	1.35 - 1.79	4	4
Disinfectant used to control microbes					
2010	Chlorite (ppm)	0.256	0.06 - 0.73	1	0.8
Byproduct of drinking water disinfection					
2010	Barium (ppm)	0.053	0.026 - 0.082	2	2
Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits					
2010	Fluoride (ppm)	0.547	0.52 - 0.58	4	4
Erosion of natural deposits; Water additive which promotes strong teeth					
2010	Nitrate (ppm)	0.197	0.08 - 0.28	10	10
Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion from natural deposits					
2010	Arsenic (ppm)	0.0006	0.0006 - 0.0006	0.010	0
Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronic production wastes.					
2010	Chromium (ppm)	0.0008	0.0008 - 0.0008	0.01	0.01
Discharge from steel and pulp mills; Erosion of natural deposits.					
2010	Selenium (ppm)	0.00102	0.00102 - 0.00102	0.05	0.05
Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.					
2006	Gross Beta Particles & Photon Emitters (pCi/L)	4.65	4.6 - 4.7	50	NA
Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation					
2010	Total Organic Carbon (ppm) - Source Water	6.19	4.86 - 8.64	NA	NA
Naturally present in the environment					
2010	Total Organic Carbon (ppm) - Drinking Water	3.08	1.72 - 5.07	NA	NA
Naturally present in the environment					
2010	Total Organic Carbon % Removal	49.79	30.83 - 74.02	NA	NA
The TOC removal ratio is the percent of TOC removed through the treatment process divided by the percent of TOC required by the TCEQ to be removed. The City of Longview water system also provides the alternative compliance criteria removal ratio required.					

Total Organic Carbon (TOC) has no adverse health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Total organic carbon provides a medium for the formation of disinfection by-products when water is disinfected. By-products of disinfection include trihalomethanes (THMs) and haloacetic acids (HAAs) which are reported elsewhere in this report.

YEAR	CONSTITUENT	HIGHEST SINGLE MEASUREMENT	LOWEST MONTHLY % OF SAMPLES MEETING LIMITS	TURBIDITY LEVEL
2010	Turbidity (NTU)	0.29	100	0.3
Soil runoff				

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity is measured in Nephelometric Turbidity Units (NTU) and is a measurement of water clarity. This water quality parameter is monitored as a treatment technique (TT).

# Unregulated Substances

Stage 1 Disinfection Byproducts				
YEAR	CONSTITUENT		AVERAGE	RANGE
2010	Chloroform (ppb)		38.25	36.62 - 39.99
	By-product of drinking water chlorination			
2010	Dichlorobromomethane (ppb)		18.02	12.33 - 22.98
	By-product of drinking water chlorination			
2010	Dibromochloromethane (ppb)		9.4	5.04 - 12.75
	By-product of drinking water chlorination			
2010	Bromoform (ppb)		0.52	ND - 1.57
	By-product of drinking water chlorination			
Bromoform, chloroform, dichlorobromomethane, and dibromochloromethane are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.				

# Regulated Substances IN THE DISTRIBUTION SYSTEM

Stage 1 Disinfection Byproducts					
YEAR	CONSTITUENT	AVERAGE	RANGE	MCL	MCLG
2010	Total Trihalomethanes (ppb)	53	28.9 - 96.96	80	NA
Byproduct of drinking water chlorination					
Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.					
2010	Total Haloacetic Acids (ppb)	27	6.9 - 31.3	60	NA
Byproduct of drinking water chlorination					
Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.					
YEAR	CONSTITUENT	THE 90th PERCENTILE	# OF SITES EXCEEDING ACTION LEVEL	ACTION LEVEL	
2010	Lead (ppb)	0.0013	0	15	
Corrosion of household plumbing systems; Erosion of natural deposits					
2010	Copper (ppm)	0.0291	0	1.3	
Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives					

The City of Longview is on a reduced sampling schedule for lead and copper, due to an excellent compliance history. The results listed above are distribution samples taken from the customers' tap. Lead and copper has not been detected in water leaving the water treatment facilities. The source of lead and copper is corrosion of household plumbing systems.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. This water supply is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present. Longview analyzes over 984 samples each year. All samples taken were negative and did not indicate the presence of coliform bacteria.

# Additional Parameters

This chart lists other items for which the water is tested. These items do not relate to public health but rather to the aesthetic quality. These parameters are often important to industrial water users or customers with special needs.

CONSTITUENT	UNITS OF MEASURE	LONGVIEW WATER
Aluminum	ppm	0.166 - 0.691
Manganese	ppm	0.002 - 0.004
Nickel	ppm	0.002 - 0.006
Zinc	ppm	0.005 - 0.021
Chloride	ppm	9.89 - 29.7
Sulfate	ppm	33.7 - 52.6
pH	pH units	8.7 - 9.2
Conductivity	µmhos/cm	215 - 325
Total Alkalinity as CaCO <sub>3</sub>	ppm	26 - 34
Bicarbonate	ppm	19 - 34
Dissolved Solids	ppm	134 - 190
Calcium	ppm	18.3 - 29.9
Magnesium	ppm	2.94 - 5.28
Sodium	ppm	7.81 - 20.7
Iron	ppm	0.013 - 0.015
Total Hardness as CaCO <sub>3</sub>	ppm	32.9 - 76.7
Total Hardness in Grains	Grains/Gallon	1.92 - 4.48